



# COIT20273 Software Design and Development Project

## Term 1 - 2021

Profile information current as at 22/05/2024 03:08 am

All details in this unit profile for COIT20273 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

## General Information

### Overview

In this capstone project, you are required to synthesise and demonstrate your technical and generic skills developed across the units studied previously. To achieve this, you will work in small teams with a designated customer to identify a small software application, its requirements (both functional and non-functional) and a software development methodology for its realisation. Your team will then develop a well designed and documented application that meets the identified requirements. In addition to the documented application, your team will also identify and produce the project management and quality assurance components required to ensure that the project is delivered within specified project outcome parameters. Emerging technologies and current research issues will support your design choices.

### Details

Career Level: *Postgraduate*

Unit Level: *Level 9*

Credit Points: 12

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.25

### Pre-requisites or Co-requisites

Pre-requisites: PPMP20007 Project Management Concepts COIT20258 Software Engineering Co-requisites: COIT20259 Enterprise Computing Architecture COIT20257 Distributed Systems: Principles and Development

Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the [Assessment Policy and Procedure \(Higher Education Coursework\)](#).

### Offerings For Term 1 - 2021

- Brisbane
- Melbourne
- Online
- Rockhampton
- Sydney

### Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

### Website

[This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.](#)

## Class and Assessment Overview

### Recommended Student Time Commitment

Each 12-credit Postgraduate unit at CQUniversity requires an overall time commitment of an average of 25 hours of study per week, making a total of 300 hours for the unit.

### Class Timetable

#### [Regional Campuses](#)

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

#### [Metropolitan Campuses](#)

Adelaide, Brisbane, Melbourne, Perth, Sydney

### Assessment Overview

#### 1. **Project (applied)**

Weighting: 100%

### Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the [University's Grades and Results Policy](#) for more details of interim results and final grades.

## CQUniversity Policies

**All University policies are available on the [CQUniversity Policy site](#).**

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the [CQUniversity Policy site](#).

## Previous Student Feedback

### Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

#### Feedback from Student evaluation

**Feedback**

Teamwork and project management skills are well received.

**Recommendation**

Continue to maintain the project-based teamwork learning model.

#### Feedback from Student evaluation

**Feedback**

The staged approach of assessment tasks and documentation requirements helps students in building their final product.

**Recommendation**

Continue the current assessment plan.

#### Feedback from Unit Coordinator's reflection

**Feedback**

The marking criteria should be made clearer and simpler.

**Recommendation**

A review of the marking criteria for the final submission is recommended.

## Unit Learning Outcomes

### On successful completion of this unit, you will be able to:

1. Apply a systems engineering process, including requirement analysis, application software design, algorithm design, coding and debugging, software testing, and software project management, informed by research into best practice
2. Demonstrate professional standards of software development including technical skills, documentation, software quality assurance, risk mitigation strategies, ethics and professional responsibility
3. Plan and manage the software development project, particularly the scheduling of time and resources and the generation of supporting documentation
4. Work collaboratively as part of a productive team
5. Communicate effectively by using written and oral presentation, understanding the needs of various stakeholders
6. Review and critically evaluate team and individual performance, reflecting on the processes followed and identifying areas for improvement.

Australian Computer Society (ACS) recognises the Skills Framework for the Information Age (SFIA). SFIA is in use in over 100 countries and provides a widely used and consistent definition of ICT skills. SFIA is increasingly being used when developing job descriptions and role profiles.

ACS members can use the tool MySFIA to build a skills profile at

<https://www.acs.org.au/professionalrecognition/mysfia-b2c.html>

This unit contributes to the following workplace skills as defined by SFIA. The SFIA code is included:

- Programming/software development (PROG)
- Project Management (PRMG)
- System Design (DESN)
- Database design (DBDS)
- Enterprise and business architecture (STPL)
- Application support (ASUP)
- Testing (TEST)
- Research (RSCH)
- User experience analysis (UNAN)
- User experience design (HCEV)
- User experience evaluation (USEV)
- Configuration management (SYSP)
- Quality assurance (QUAS)
- Quality standards (QUST)






















## Alignment of Learning Outcomes, Assessment and Graduate Attributes

|   |  |  |  |  |  |
|---|--|--|--|--|--|
|  N/A Level |  Introductory Level |  Intermediate Level |  Graduate Level |  Professional Level |  Advanced Level |
|---|--|--|--|--|--|








### Alignment of Assessment Tasks to Learning Outcomes

| Assessment Tasks             | Learning Outcomes |   |   |   |   |   |
|------------------------------|-------------------|---|---|---|---|---|
|                              | 1                 | 2 | 3 | 4 | 5 | 6 |
| 1 - Project (applied) - 100% | •                 | • | • | • | • | • |

### Alignment of Graduate Attributes to Learning Outcomes

| Graduate Attributes                                | Learning Outcomes   |   |   |   |  |   |
|--|---|---|---|---|--|---|
|  | 1   | 2   | 3   | 4   | 5  | 6   |
| 1 - Knowledge                                      |    |    |   |   |   |   |
| 2 - Communication                                  |    |   |    |    |   |    |
| 3 - Cognitive, technical and creative skills       |   |   |   |   |  |   |
| 4 - Research                                       |  |   |   |   |  |  |
| 5 - Self-management                                |  |  |  |  |  |   |
| 6 - Ethical and Professional Responsibility        |   |   |   |  |  |  |
| 7 - Leadership                                     |   |   |   |  |  |  |
| 8 - Aboriginal and Torres Strait Islander Cultures |   |   |   |   |  |   |

### Alignment of Assessment Tasks to Graduate Attributes

| Assessment Tasks             | Graduate Attributes   |  |   |   |   |   |   |   |
|------------------------------|---|--|---|---|---|---|---|---|
|                              | 1   | 2  | 3   | 4   | 5   | 6   | 7   | 8 |
| 1 - Project (applied) - 100% |  |  |  |  |  |  |  |   |

## Textbooks and Resources

### Textbooks

**There are no required textbooks.**

### IT Resources

**You will need access to the following IT resources:**

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

## Referencing Style

All submissions for this unit must use the referencing style: [Harvard \(author-date\)](#)  
For further information, see the Assessment Tasks.

## Teaching Contacts

**Lily Li** Unit Coordinator  
[l.li@cqu.edu.au](mailto:l.li@cqu.edu.au)

## Schedule

### Week 1 - 08 Mar 2021

| Module/Topic  | Chapter | Events and Submissions/Topic   |
|---|---------|--|
| Workshop: <ul style="list-style-type: none"><li>• Unit outcomes</li><li>• Review software engineering topics</li><li>• Review project plan topics</li><li>• Scrum - Agile software project management method (optional)</li></ul> |         | <ul style="list-style-type: none"><li>• Form groups</li><li>• Identify project</li><li>• Identify roles in the team</li><li>• Choose project management method</li></ul> |

### Week 2 - 15 Mar 2021

| Module/Topic   | Chapter | Events and Submissions/Topic |
|--|---------|------------------------------|
| Workshop: <ul style="list-style-type: none"><li>• Project planning</li></ul> |         |                              |

### Week 3 - 22 Mar 2021

| Module/Topic | Chapter | Events and Submissions/Topic |
|--------------|---------|------------------------------|
| Workshop     |         |                              |

### Week 4 - 29 Mar 2021

| Module/Topic | Chapter | Events and Submissions/Topic |
|--------------|---------|------------------------------|
| Workshop     |         | Submit Artefact one          |

### Week 5 - 05 Apr 2021

| Module/Topic | Chapter | Events and Submissions/Topic |
|--------------|---------|------------------------------|
| Workshop     |         |                              |

### Vacation Week - 12 Apr 2021

| Module/Topic | Chapter | Events and Submissions/Topic |
|--------------|---------|------------------------------|
|--------------|---------|------------------------------|

|                                       |                |  |
|---------------------------------------|----------------|--|
| <b>Week 6 - 19 Apr 2021</b>           |                |  |
| <b>Module/Topic</b>                   | <b>Chapter</b> | <b>Events and Submissions/Topic</b>                                |
| Workshop                              |                | Submit Artefact two  |
| <b>Week 7 - 26 Apr 2021</b>           |                |  |
| <b>Module/Topic</b>                   | <b>Chapter</b> | <b>Events and Submissions/Topic</b>                                |
| Workshop                              |                |  |
| <b>Week 8 - 03 May 2021</b>           |                |  |
| <b>Module/Topic</b>                   | <b>Chapter</b> | <b>Events and Submissions/Topic</b>                                |
| Workshop                              |                | Submit Artefact three - progress report A                          |
| <b>Week 9 - 10 May 2021</b>           |                |  |
| <b>Module/Topic</b>                   | <b>Chapter</b> | <b>Events and Submissions/Topic</b>                                |
| Workshop                              |                |  |
| <b>Week 10 - 17 May 2021</b>          |                |  |
| <b>Module/Topic</b>                   | <b>Chapter</b> | <b>Events and Submissions/Topic</b>                                |
| Workshop                              |                | Submit Artefact three - progress report B                          |
| <b>Week 11 - 24 May 2021</b>          |                |  |
| <b>Module/Topic</b>                   | <b>Chapter</b> | <b>Events and Submissions/Topic</b>                                |
| Workshop                              |                |  |
| <b>Week 12 - 31 May 2021</b>          |                |  |
| <b>Module/Topic</b>                   | <b>Chapter</b> | <b>Events and Submissions/Topic</b>                                |
| Workshop                              |                | Oral presentation  |
| <b>Review/Exam Week - 07 Jun 2021</b> |                |  |
| <b>Module/Topic</b>                   | <b>Chapter</b> | <b>Events and Submissions/Topic</b>                                |
|                                       |                | Submit Artefact four - final project document and presentation PPT |
| <b>Exam Week - 14 Jun 2021</b>        |                |  |
| <b>Module/Topic</b>                   | <b>Chapter</b> | <b>Events and Submissions/Topic</b>                                |

## Term Specific Information

Unit Coordinator: Dr Lily Li  
 College of ICT, School of Engineering and Technology  
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 Phone: (61) 7 4723 2267

## Assessment Tasks

### 1 Project Portfolio - Software Development Artefacts

#### Assessment Type

Project (applied)

#### Task Description

You will work in teams using either a plan-driven or Agile approach on the realisation of a small software development project. The following artefacts are to be submitted:

#### 1. Artefact one (each team leader submits)

*Plan-driven approach:* Project Plan and Requirements Specification. The project plan is to provide a description of the project scope and its schedule, risks, product quality and resources. The requirement specification is to provide a clear list of non-functional and functional requirements for the application to be developed.

*Agile approach:* Plan and User Stories. The plan is to provide a record of discussions with the customer regarding the nature of the application that is to be developed, the number of iterations expected and the anticipated involvement of the customer. User Stories document the initial set of user stories agreed with the customer.

## **2. Artefact two (each team leader submits)**

*Plan-driven approach:* Design Document. The design document will follow the template provided in your pre-requisite unit, COIT20258 Software Engineering.

*Agile approach:* Design Review. A document outlining the software architecture and the initial design approach is to be provided.

## **3. Artefact three – Progress Reports (two submissions, each team leader submits)**

Two progress reports are to be submitted as Word documents in Week 8 and Week 10. The reports are to review progress and to review the risk plan. If Agile development is employed, the reports are to include a review of any design refactoring that has been made. This review will be assessed as part of Artefact 2.

## **4. Artefact four: Final Project Document and Presentation (each student has to submit this final assignment)**

*Plan-driven approach* – This final submission includes three distinctive parts: The first part is a project report describing the implementation and the testing of the product (group). The second part is a project review report including peer review report (individual). The last part consists of a PowerPoint file (group) and an Oral in-class/online presentation (all group members need to present at the presentation. Each student will be marked individually).

*Agile approach* – The final submission includes all the documents for the final release of the software product. It consists of the final requirements and design documents (group), the testing report (group), the project review report including peer review report (individual), the PowerPoint file (group) and the Oral in-class/online presentation (all group members need to present at the presentation. Each student will be marked individually).

Feedback for artefacts one & two will be provided within two weeks after the submission. Feedback for artefact three will be provided within one week after the submission. Feedback for artefact four will be available on the Certification day. If the Agile approach is employed, your marks for each artefact will be assessed at the final stage. Please make sure to re-submit all your previous artefacts in the final submission.

Contact time is allocated each week in the form of a workshop. Regular project meetings will be held within the workshop to present, review and monitor the progress of the teams. Teams will be required to give presentations for artefacts two and four in the week that the artefact is due. The project itself will be concerned with the development of a 3-layered information system or an equivalent application; details will be available on the unit website.

### **Assessment Due Date**

Refer to the unit schedule for due dates.

### **Return Date to Students**

Feedback for artefacts one & two will be provided within two weeks after the submission. Feedback for artefact three will be provided within one week after the submission. Feedback for artefact four will be provided on the Certification day.

### **Weighting**

100%

### **Assessment Criteria**

1. Artefact one (30%)
2. Artefact two (20%)
3. Artefact three (10%)



#### 4. Artefact four (40%)

Note: The detailed marking guides are available on the unit website. For the Agile approach, the marks for Artefact one, Artefact two and Artefact three will be awarded at the end of term, together with Artefact four. The feedback will be provided for those early Artefacts.

#### Referencing Style

- [Harvard \(author-date\)](#)

#### Submission

Online

#### Submission Instructions

Artefacts 1, 2 & 3 will be submitted by the team leaders. One group one submission is required. Every student needs to submit the Artefact 4.

#### Learning Outcomes Assessed

- Apply a systems engineering process, including requirement analysis, application software design, algorithm design, coding and debugging, software testing, and software project management, informed by research into best practice
- Demonstrate professional standards of software development including technical skills, documentation, software quality assurance, risk mitigation strategies, ethics and professional responsibility
- Plan and manage the software development project, particularly the scheduling of time and resources and the generation of supporting documentation
- Work collaboratively as part of a productive team
- Communicate effectively by using written and oral presentation, understanding the needs of various stakeholders
- Review and critically evaluate team and individual performance, reflecting on the processes followed and identifying areas for improvement.

#### Graduate Attributes

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Self-management
- Ethical and Professional Responsibility
- Leadership

## Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the [Student Academic Integrity Policy and Procedure](#). This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

### What is a breach of academic integrity?

A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

### Why is academic integrity important?

A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

### Where can I get assistance?

For academic advice and guidance, the [Academic Learning Centre \(ALC\)](#) can support you in becoming confident in completing assessments with integrity and of high standard.

### What can you do to act with integrity?



#### Be Honest

If your assessment task is done by someone else, it would be dishonest of you to claim it as your own



#### Seek Help

If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)



#### Produce Original Work

Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem